

ABSTRACT OF THE DISCLOSURE

Sodium chloride and purified water are recovered by treating salt water that contains sodium chloride with an integrated reverse osmosis and electrodialysis system, which includes an efficiency-enhancing feature that is one or more of the following: the use of univalent anion and univalent cation selective membranes in the electrodialysis unit; the addition of a nanofiltration unit to process the diluate from the electrodialysis unit; or operation of the electrodialysis unit at an elevated pressure. Magnesium and bromine can optionally be produced when the salt water contains these materials.